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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,639	05/12/2005	Alan George Rock	P2481US	1659

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EXAMINER

COURSON, TANIA C

ART UNIT	PAPER NUMBER
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2859

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

38

<b>Office Action Summary</b>	<b>Application No.</b> 10/534,639	<b>Applicant(s)</b> ROCK ET AL.	
	<b>Examiner</b> Tania C. Courson	<b>Art Unit</b> 2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9, 11, 13, 15, 18-21, 26-28 and 30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11, 13, 15, 18-21, 26-28 and 30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 May 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12MAY05</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following must be shown or the feature(s) canceled from the claim(s):

- a) claim 1, line 4, “one or more motion sensors”;
- b) claim 6, line 4 and lines 9-10, “or more motion sensors”, and;
- c) claim 15, lines 2-3, “a plurality of motion sensors consisting of at least three accelerometers and three angular rate sensors”;
- d) claim 30, line 2, “a non-contact distance meter”.

No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claim 1 is objected to because of the following informalities: it is unclear how one motion sensor could detect motion in six degrees of freedom, when it appears that one would need six motion sensors in order to detect motion in six degrees of freedom. For examination purposes, the examiner has assumed only one motion detector, although the reference (GB 2045938 A) utilized in the rejection does have at least six motion sensors. Appropriate correction is required.

3. Claim 15 is objected to because of the following informalities: it is unclear how a plurality of motion detectors “consists” of at least three accelerometers and three angular rate sensors. “Consists” signifies no more and no less than what is being claimed, so the use of “at least” after “consists” is confusing claim language. For examination purposes, the examiner has assumed “comprising of at least three accelerometers and three angular rate sensors”

Appropriate correction is required.

*Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-9, 11, 13, 15, 18-21, 26-28 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Davis (GB 2045938 A).

Davis disclose in the Figure, a measuring device comprising:

With respect to claims 1-4:

- a) a housing (1), power supply means (page 1, lines 118-122), a processor (14) and one or more motion sensors (7-12) adapted to provide a measure of the relative spatial separation of at least first and second locations (page 2, lines 63-80), a user actuated trigger (5) for identifying at least said first location and

- a display (15) for visually presenting information on a measured relative spatial separation (the Figure) wherein said one or more motion sensors detect motion in six degrees of freedom (page 2, lines 63-80) and said processor is adapted to determine at least one angle as a measure of said relative spatial separation for presentation by said display (page 2, lines 63-80);
- b) wherein said processor is adapted to determine said at least one angle with respect to one or both of vertical and horizontal planes (page 2, lines 31-43);
  - c) wherein said processor is adapted to determine whether said first and second locations are level with respect to either of said vertical or horizontal planes (page 2, lines 31-43);
  - d) wherein said processor is adapted to determine, in addition to said at least one angle, a linear distance separating said first and second locations (page 2, lines 31-43).

With respect to claim 5:

- a) a housing (1), power supply means (page 1, lines 118-122), a processor (14) and one or more motion sensors (7-12) adapted to provide a measure of the relative spatial separation of at least first and second locations (page 2, lines 63-80), a user actuated trigger (5) for identifying at least said first location and a display (15) for visually presenting information on a measured relative spatial separation (the Figure) wherein said processor is adapted to determine

Art Unit: 2859

at least one angle and a linear distance as a measure of said relative spatial separation for presentation by said display (page 2, lines 31-43).

With respect to claims 6-9, 11, 13, 15, 18-21 and 26-28:

- a) a housing (1), power supply means (page 1, lines 118-122), a processor (14) and one or more motion sensors (7-12) adapted to provide a measure of the relative spatial separation of at least first and second locations (page 2, lines 63-80), a user actuated trigger (5) for identifying at least said first location and a display (15) for visually presenting information on a measured relative spatial separation (the Figure) said measuring device further including a measuring point (3) provided on said housing having a defined spatial relationship with respect to said one or more motion sensors (the Figure), said measuring point being provided for identification to said processor (the Figure), in association with said user actuated trigger, at least one of said first and second locations (page 2, lines 31-43);
- b) wherein said measuring point is visually distinguishable on said housing and user alignable with a user selected spatial location (page 2, lines 31-43);
- c) wherein said measuring point is adapted to be substantially stationary when aligned by a user with a selected spatial location (the Figure);
- d) wherein processor is adapted to determine an error correction when said measuring point is aligned with a selected spatial location and is substantially

stationary, in relation to motion detected by said one or more motion sensors  
(page 2, lines 95-120);

- e) wherein the processor is in communication with a volatile memory in which is stored calibration data and the processor is adapted to update calibration data stored in said volatile memory at a second or subsequent location (page 2, lines 95-120);
- f) wherein said processor is adapted for movement of the one or more motion sensors as a result of uncontrolled hand movements of the user when updating calibration data stored in said volatile memory (page 2, lines 95-120);
- g) comprising a plurality of motion sensors consisting of at least three accelerometers and three angular rate sensors (page 2, lines 74-80);
- h) further including a timer, in communication with the processor for monitoring the time duration of a measurement wherein the processor is adapted to determine the measure of relative spatial separation to a resolution dependent upon the time duration of the measurement (page 1, lines 35-50);
- i) wherein the processor is adapted to determine from information received from the motion sensors when the measuring device is stationary and to generate an error correction (page 2, lines 95-120);
- j) wherein the processor has access to threshold data identifying lower limits of measurable spatial movement representative of small, uncontrolled hand movements of a user (page 2, lines 95-120);

- k) further comprising a deceleration device for reducing high deceleration forces (page 2, lines 116-120);
- l) wherein the processor is adapted to supply real time data on the measured relative spatial separation (page 1, lines 35-50);
- m) wherein said first location, from which the spatial separation of said second location is determined, is selected from a reference point, a reference line or a reference plane (page 2, lines 31-44);
- n) wherein the processor additionally includes a data store in which motion data is stored and said processor is adapted to update said stored motion data in dependence on calculated error corrections or updated calibration data and to recalculate said measured spatial separation in dependence on the updated motion data (page 2, lines 95-120).

With respect to the preamble of the claims 1 and 5-6: the preamble of the claim has not been given any patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self – contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 ( CCPA 1951).



***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Richter (US 6,715,213 B2).

Davis discloses a measuring device, as stated above in paragraph 5.

Davis does not disclose including a non-contact distance meter for measuring a distance to a position remote from the measuring device, the position being at least one of said first and second locations.

Richter teaches an analysis sample device that consists of including a non-contact distance meter (34) for measuring a distance to a position remote from the measuring device, the position being at least one of said first and second locations (column 4, lines 20-37). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the measuring device of Davis, so as to include a non-contact distance meter, as taught by Richter, in order to increase precision when measuring a distant position.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art cited on PTO-892 and not mentioned above disclose a measuring device:

Richter et al. (US 2005/0166410 A1)

Hamar (US 2004/0083616 A1)

Kunitomo (US 6,792,382)

Beckhart et al. (US 6,526,668 B1)

Albrecht (US 6,354,011 B1)

Gerhard (US 5,125,165)

Brunson et al. (US 4,549,277)

Delmas (US 4,275,505)

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tania C. Courson whose telephone number is (571) 272-2239. The examiner can normally be reached on Monday, Wednesday and Thursday from 10AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached on (571) 272-2245.

The fax number for this Organization where this application or proceeding is assigned is (571) 273-8300.

Art Unit: 2859

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DIEGO F.F. GUTIERREZ  
SUPERVISORY PATENT EXAMINER  
GROUP ART UNIT 2859

TCC  
September 15, 2006